CONTENTS OF VOLUME 41

No. 1 (pp 1–154) published March 1994
No. 2 (pp 155–280) published April 1994
No. 3 (pp 281–372) published May 1994
No. 4 (pp 373–494) published June 1994
No. 5 (pp 495–626) published July 1994
No. 6 (pp 627–732) published August 1994

Al Hasan RH, Sorkhoh NA, Al Bader D, Radwan SS: Utilization of hydrocarbons by cyanobacteria from microbial mats on oily coasts of the Gulf 615

Altpeter F, Posselt UK: Production of high quantities of 3-acetyldeoxynivalenol and deoxynivalenol 384

Aronstein BN, Maka A, Srivastava VJ: Chemical and biological removal of cyanides from aqueous and soil-containing systems 700

Bar R, Ulitzur S: Bacterial toxicity of cyclodextrins: Luminuous *Escherichia coli* as a model (Short contribution) 574

Baut F, Fick M, Viriot ML, André JC, Engasser JM: Investigation of acetone-butanol-ethanol fermentation by fluorescence 551

Béal C, Spinnler HE, Corrieu G: Comparison of growth, acidification and productivity of pure and mixed cultures of *Streptococcus salivarius* subsp. *thermophilus* 404 and *Lactobacillus delbrueckii* subsp. *bulgaricus* 398 95

Bernardez TD, Lyford KA, Lynd LR: Kinetics of the extracellular cellulases of *Clostridium thermocellum* acting on pretreated mixed hardwood and Avicel 620

Bhowmik T, Steele JL: Cloning, characterization and insertional inactivation of the *Lactobacillus helveticus* D(-) lactate dehydrogenase gene 432

Birrer GA, Chesbro WR, Zsigray RM: Electro-transformation of *Clostridium beijerinckii* NRRL B-592 with shuttle plasmid pHR106 and recombinant derivatives 32

Blondeau K, Boutur O, Boze H, Jung G, Moulin G, Galzy P: Development of high-cell-density fermentation for heterologous interleukin 1β production in *Kluyveromyces lactis* controlled by the PHO5 promotor 324

Blondeaux A, Cochet N: Ice-nucleating activity of *Pseudomonas syringae* cultivated on a natural substrate; influence of phosphate 627

Bokhamy M, Adler N, Pulgarin C, Deront M, Seignez C, Péringer P: Degradation of sodium anthraquinone sulphonate by free and immobilized bacterial cultures 110

Bonekamp FJ, Oosterom J: On the safety of *Kluyveromyces lactis* – a review 1

Brady D, Duncan JR: Bioaccumulation of metal cations by *Saccharomyces cerevisiae* 149

Brearley GM, Price CP, Atkinson T, Hammond PM: Purification and partial characterisation of a broad-range L-amino acid oxidase from *Bacillus carotarum* 2Pfa isolated from soil 670

Burback BL, Perry JJ, Rudd LE: Effect of environmental pollutants and their metabolites on a soil mycobacterium 134

Busscher HJ, Neu TR, Mei HC van der: Biosurfactant production by thermophilic dairy streptococci 4

Cachon R, Diviès C: Generalized model of the effect of pH on lactate fermentation and citrate bioconversion in *Lactococcus lactis* ssp. *lactis* biovar. *diacetylactis* 694

Chelius MK, Wodzinski RJ: Strain improvement of *Aspergillus niger* for phytase production 79

Cidaria D, Deidda F, Bosetti A: A rapid method for naphtalene dioxygenase assay in whole cells of naphtalene *cis*-dihydrodiol dehydrogenase blocked *Pseudomonas fluorescens:* Screening of potential inducers of dioxygenase activity 689

Claret C, Salmon JM, Romieu C, Bories A: Physiology of *Gluconobacter oxydans* during dihydroxyacetone production from glycerol 365

Cook GM, Morgan HW: Hyperbolic growth of *Thermoanaerobacter thermohydrosulfuricus (Clostridium thermohydrosulfuricum)* increases ethanol production in pH-controlled batch culture 84

Crittenden RG, Doelle HW: Identification and characterisation of the extracellulur sucrases of *Zymomonas mobilis* UQM 2716 (ATCC 39676) 302

Csikor Z, Miháltz P, Czakó L, Holló J: New interpretation of expansion in biofilm-coated particle fluidization 608

Dave KI, Lauriano C, Xu B, Wild JR, Kenerley CM: Expression of organophosphate hydrolase in the filamentous fungus *Gliocladium virens* 352

Dick O, Onken U, Sattler I, Zeeck A: Influence of increased dissolved oxygen concentration on productivity and selectivity in cultures of a colabomycin-producing strain of *Streptomyces griseoflavus* 373

Dyrset N, Lystad KQ, Levine DW: Development of a fermentation process for production of an alginate G-lyase from *Klebsiella pneumoniae* 523

Edgehill RU: Pentachlorophenol removal from slightly acidic mineral salts, commercial sand, and clay soil by recovered *Arthrobacter* strain ATCC 33790 142

Ejiofor AO, Solomon BO, Posten C, Deckwer W-D: Analysis of the respiro-fermentative growth of *Saccharomyces cerevisiae* on glucose in a fed-batch fermentation strategy for accurate parameter estimation 664

Fava F, Di Gioia D, Cinti S, Marchetti L, Quattroni G: Degradation and dechlorination of low-chlorinated biphenyls by a three-membered bacterial coculture 117

Feller G, Narinx E, Arpigny JL, Zekhnini Z, Swings J, Gerday C: Temperature dependence of growth, enzyme secretion and activity of psychrophilic Antarctic bacteria (Short contribution) 477

Fißler J, Schirra C, Kohring G-W, Giffhorn F: Hydrogen production from aromatic acids by *Rhodopseudomonas palustris* 395

Fouchet P, Manin C, Richard H, Frelat G, Barbotin J-N: Flow cytometry studies of recombinant *Escherichia coli* in batch and continuous cultures: DNA and RNA contents; light-scatter parameters 584

Frølund B, Keiding K: Implementation of an HPLC polystyrene

divinylbenzene column for separation of activated sludge exopolymers 708
Garbay S, Lonvaud-Funel A: Characterization of membrane-bound ATPase activity of *Leuconostoc oenos*: growth conditions 597
Girard P, Falconnier B, Bricout J, Vladescu B: β-Carotene producing mutants of *Phaffia rhodozyma* 183
Gobbetti M, Corsetti A, Rossi J: The sourdough microflora. Interactions between lactic acid bacteria and yeasts: metabolism of carbohydrates 456
Guillén F, Martínez AT, Martínez MJ, Evans CS: Hydrogen-peroxide-producing system of *Pleurotus eryngii* involving the extracellular enzyme aryl-alcohol oxidase 465
Hack CJ, Woodley JM, Lilly MD, Liddell JM: The production of *Pseudomonas putida* for the hydroxylation of toluene to its *cis*-glycol 495
Hädrich-Meyer S, Berger RG: Localization of lipolytic and esterolytic activities of *Tyromyces sambuceus*, a 4-decanolide-producing basidiomycete 210
Hahn-Hägerdal B, Jeppsson H, Olsson L, Mohagheghi A: An interlaboratory comparison of the performance of ethanol-producing micro-organisms in a xylose-rich acid hydrolysate 62
Hamzah RY, Al-Baharna BS: Catechol ring-cleavage in *Pseudomonas cepacia*: the simultaneous induction of *ortho* and *meta* pathways 250
Hansen HA, Emborg C: Extra- and intracellular amino acid concentrations in continuous Chinese hamster ovary cell culture 560
Hou CT, Jackson MA, Bagby MO, Becker LA: Microbial oxidation of cumene by octane-grown cells 178
Iborra JL, Manjón A, Cánovas M, Lozano P, Martínez C: Continuous limonin degradation by immobilized *Rhodococcus fascians* cells in K-carrageenan 487
Iwane M, Watanabe T, Shintani A, Kaisho Y, Matsumoto S, Sasada R, Igarashi K: Purification and characterization of biologically active recombinant human neurotrophin-3 produced by expression of a chimera gene in Chinese hamster ovary cells 225
Janssen PH, Peek K, Morgan HW: Effect of culture conditions on the production of an extracellular proteinase by *Thermus* sp. Rt41A 400
Jetten MSM, Pitoc GA, Follettie MT, Sinskey AJ: Regulation of phospho(enol)-pyruvate- and oxaloacetate-converting enzymes in *Corynebacterium glutamicum* 47
Kadokura H, Yoda K, Watanabe S, Kikuchi Y, Tamura G, Yamasaki M: Enhancement of protein secretion by optimizing protein synthesis: isolation and characterization of *Escherichia coli* mutants with increased secretion ability of alkaline phosphatase 163
Kästner M, Breuer-Jammali M, Mahro B: Enumeration and characterization of the soil microflora from hydrocarbon-contaminated soil sites able to mineralize polycyclic aromatic hydrocarbons (PAH) 267
Kaiser D, Onken U, Sattler I, Zeeck A: Influence of increased dissolved oxygen concentration on the formation of secondary metabolites by manumycin-producing *Streptomyces parvulus* 309
Kawakubo Y, Matsushita T, Funatsu K: Tissue plasminogen activator (t-PA) production by a high density culture of weakly adherent human embryonic kidney cells using a polyurethane-foam packed-bed culture system 413
Khare SK, Jha K, Gandhi AP: Use of agarose-entrapped *Aspergillus niger* cells for the production of citric acid from soy whey (Short contribution) 571
Kirinaka H, Kamihira M, Iijima S, Kobayashi T: A new runaway type episomal vector for mammalian cells based on a temperature-sensitive simian virus 40 and inducible erythropoietin production 591
Kondo A, Kamura H, Higashitani K: Development and application of thermo-sensitive magnetic immunomicrospheres for antibody purification 99
Kosugi Y, Azuma N: Continuous and consecutive conversion of free fatty acid in rice bran oil to triacylglycerol using immobilized lipase 407
Kudrya VA, Simonenko IA: Alkaline serine proteinase and lectin isolation from the culture fluid of *Bacillus subtilis* 505
Kurosawa H, Hirano T, Nakamura K, Amano Y: Microbial sensor for selective determination of sulphide 556
Leal DP, Isla MI, Vattuone MA, Sampietro AR: Production of plant protoplasts by enzymes from selected wood-destroying fungi 58
Lee S-T, Rhee S-K, Lee GM: Biodegradation of pyridine by freely suspended and immobilized *Pimelobacter* sp. 652
Lievense LC, Verbeek MAM, Noomen A, Riet K van 't: Mechanism of dehydration inactivation of *Lactobacillus plantarum* 90
Lin S-C, Carswell KS, Sharma MM, Georgiou G: Continuous production of the lipopeptide biosurfactant of *Bacillus licheniformis* JF-2 281
Liu SM, Jones WJ, Rogers JE: Influence of redox potential on the anaerobic biotransformation of nitrogen-heterocyclic compounds in anoxic freshwater sediments 717
Louis P, Trüper HG, Galinski EA: Survival of *Escherichia coli* during drying and storage in the presence of compatible solutes 684
Madyastha KM, Joseph T: Transformation of 16-dehydroprogesterone and 17α-hydroxyprogesterone by *Mucor piriformis* 170
Marino-Buslje C, Molina MA, Canals F, Avilés FX, Querol E: Overproduction of a recombinant carboxypeptidase inhibitor by optimization of fermentation conditions 632
Martínez MJ, Muñoz C, Guillén F, Martínez AT: Studies on homoveratric acid transformation by the ligninolytic fungus *Pleurotus eryngii* 500
McKay IA, Maddox IS, Brooks JD: High specific rates of glucose utilisation under conditions of restricted growth are required for citric acid accumulation by *Yarrowia lipolytica* IMK 2 73
Meinhardt F, Busskamp M, Wittchen KD: Cloning and sequencing of the *leu* C and *npr* M genes and a putative *spo* IV gene from *Bacillus megaterium* DSM319 344
Molina Grima E, Sánchez Pérez JA, García Camacho F, Fernández Sevilla JM, Acién Fernández FG: Effect of growth rate on the eicosapentaenoic acid and docosahexaenoic acid content of *Isochrysis galbana* in chemostat culture 23
Moreira JL, Alves PM, Aunins JG, Carrondo MJT: Changes in animal cell natural aggregates in suspended batch cultures 203
Nakao M, Nakayama T, Harada M, Kakudo A, Ikemoto H, Kobayashi S, Shibano Y: Purification and characterization of a *Bacillus* sp. SAM1606 thermostable α-glucosidase with transglucosylation activity 337
Nishimura M, Sugiyama M: Cloning and sequence analysis of a *Streptomyces* cholesterol esterase gene 419
Ohashi H, Yasufuku K, Yano M: High-yield production of human big endothelin-1 by a combination of chemical modification and proteolysis of a fusion protein in *Escherichia coli* 677
Okeke BC, Paterson A, Smith JE, Watson-Craik IA: The relationship between phenol oxidase activity, soluble protein and ergosterol with growth of *Lentinus* species in oak sawdust logs 28
Ozergin-Ulgen K, Mavituna F: Comparison of the activity of immobilised and freely suspended *Streptomyces coelicolor* A3(2) 197
Parente E, Ricciardi A, Addario G: Influence of pH on growth and bacteriocin production by *Lactococcus lactis* subsp. *lactis* 140NWC during batch fermentation 388
Pflugmacher U, Gottschalk G: Development of an immobilized cell reactor for the production of 1,3-propanediol by *Citrobacter freundii* 312
Quax WJ, Broekhuizen CP: Development of a new *Bacillus* car-

boxyl esterase for use in the resolution of chiral drugs 425
Quesada-Chanto A, S.-Afschar A, Wagner F: Microbial production of propionic acid and vitamin B_{12} using molasses or sugar 378
Radtke C, Cook WS, Anderson A: Factors affecting antagonism of the growth of *Phanerochaete chrysosporium* by bacteria isolated from soils 274
Rättö M, Mathrani IM, Ahring B, Viikari L: Application of thermostable xylanase of *Dictyoglomus* sp. in enzymatic treatment of kraft pulps 130
Ragout A, Siñeriz F: Influence of dilution rate on the morphology and technological properties of *Lactobacillus delbrueckii* subsp. *bulgaricus* 461
Rollins MJ, Gaucher GM: Ammonium repression of antibiotic and intracellular proteinase production in *Penicillium urticae* 447
Roukas T: Solid-state fermentation of carob pods for ethanol production 296
Sanchez JM, Arijo S, Muñoz MA, Moriñigo MA, Borrego JJ: Microbial colonization of different support materials used to enhance the methanogenic process 480
Sánchez-Torres P, Gonzáles R, Pérez-González JA, González-Candelas L, Ramón D: Development of a transformation system for *Trichoderma longibrachiatum* and its use for constructing multicopy transformants for the *egl1* gene 440
Sato N, Shimada M, Nakajima H, Oda H, Kimura S: Cloning and expression in *Escherichia coli* of the gene encoding the *Proteus vulgaris* chondroitin ABC lyase 39
Sawayama S, Inoue S, Yokoyama S: Continuous culture of hydrocarbon-rich microalga *Botryococcus braunii* in secondarily treated sewage (Short contribution) 729
Schneider KH, Giffhorn F: Overproduction of mannitol dehydrogenase in *Rhodobacter sphaeroides* 578
Soccol CR, Marin B, Raimbault M, Lebeault J-M: Potential of solid state fermentation for production of L(+)-lactic acid by *Rhizopus oryzae* 286
Soccol CR, Marin B, Raimbault M, Lebeault J-M: Breeding and growth of *Rhizopus* in raw cassava by solid state fermentation 330
S Torrestiana B, Brito de la Fuente E, Lacroix C, Choplin L: Modelling the acidifying activity profile of *Lactobacillus bulgaricus* cultures 192
Takagi M, Ueda K: Comparison of the optimal culture conditions for cell growth and tissue plasminogen activator production by human embryo lung cells on microcarriers 565
Tanaka H, Ohta T, Harada S, Ogbonna JC, Yajima M: Development of a fermentation method using immobilized cells under unsterile conditions. 1. Protection of immobilized cells against anti-microbial substances 544
Tange T, Taguchi S, Kojima S, Miura K, Momose H: Improvement of a useful enzyme (subtilisin BPN′) by an experimental evolution system 239
Tantirungkij M, Izuishi T, Seki T, Yoshida T: Fedbatch fermentation of xylose by a fast-growing mutant of xylose-assimilating recombinant *Saccharomyces cerevisiae* 8
Tebbe CC, Olson BH: Adaptation of *Pseudomonas aeruginosa* harbouring the multi-resistance plasmid Rip64 to high levels of mercury chloride, carbenicillin and gentamicin (Short contribution) 245
Tonkova A, Ivanova V, Dobreva E, Stefanova M, Spasova D: Thermostable α-amylase production by immobilized *Bacillus licheniformis* cells in agar gel and on acrylonitrile/acrylamide membranes 517
Tourdot-Marechal R, Chamaret P, Cavin J-P, Divies C: Obtaining functional membrane vesicles from *Leuconostoc oenos* to study L-malate transport mechanisms 603
Trigo C, Ball AS: Production of extracellular enzymes during the solubilisation of straw by *Thermomonospora fusca* BD25 366
Truong-Meyer XM, Strehaiano P, Riba JP: Thermal treatment of yeast cells in a strawberry product enumeration procedure 262
Tsen S-D: Chemostat selection of *Escherichia coli* mutants secreting thymidine, cytosine, uracil, guanine, and thymine 233
Tsuchido T: Induction of cell autolysis of *Bacillus subtilis* with lysophosphatidylcholine (Short contribution) 106
Tsuji Y, Fukui T, Kawamoto T, Tanaka A: Enantioselective dehydrogenation of β-hydroxysilanes by horse liver alcohol dehydrogenase with a novel in-situ NAD^+ regeneration system 219
Tybussek R, Linz F, Schügerl K, Moses N, Léonard AJ, Rouxhet PG: Comparison of the continuous flotation performances of *Saccharomyces cerevisiae* LBG H620 and DSM 2155 strains 13
Ueda M, Yamada H, Asano Y: The substrate specificity of maleate hydratase from *Arthrobacter* sp. strain MCI2612 215
Vainio AEI, Lantto R, Parkkinen EEM, Torkkeli HT: Production of *Hormoconis resinae* glucoamylase P by a stable industrial strain of *Saccharomyces cerevisiae* 53
van de Merbel NC, Ruijter GJG, Lingeman H, Brinkman UATh, Visser J: An automated monitoring system using on-line ultrafiltration and column liquid chromatography for *Aspergillus niger* fermentations 658
Viikari L, Kantelinen A, Buchert J, Puls J: Enzymatic accessibility of xylans in lignocellulosic materials 124
Vílchez C, Vega JM: Nitrite uptake by *Chlamydomonas reinhardtii* cells immobilized in calcium alginate 137
Visser S, Slangen CJ, Robben AJPM, van Dongen WD, Heerma W, Haverkamp J: Action of a cell-envelope proteinase (CEP_{III}-type) from *Lactococcus lactis* subsp. *cremoris* AM_1 on bovine κ-casein 644
Wang M-Y, Bentley WE: Continuous insect cell (Sf-9) culture with aeration through sparging 317
Wang S, Kretzmer G, Schügerl K: Comparison of the morphologies of a flotable and non-flotable strain of *Saccharomyces cerevisiae* 537
Wehrheim B, Wettern M: Biosorption of cadmium, copper and lead by isolated mother cell walls and whole cells of *Chlorella fusca* 725
Weinhäusel A, Nidetzky B, Rohrbach M, Blauensteiner B, Kulbe KD: A new maltodextrin-phosphorylase from *Corynebacterium callunae* for the production of glucose-1-phosphate 510
Wells JE, Russell JB: The endogenous metabolism of *Fibrobacter succinogenes* and its relationship to cellobiose transport, viability and cellulose digestion 471
Wiesmann R, Maier ST, Marx U, Buchholz R: Characterization of oxygen transfer in a membrane-aerated hollow-fibre bioreactor using modified microcoaxial needle electrodes 531
Wind RD, Buitelaar RM, Eggink G, Huizing HJ, Dijkhuizen L: Characterization of a new *Bacillus stearothermophilus* isolate: a highly thermostable α-amylase-producing strain 155
Wood TM, Wilson CA, McCrae SI: Synergism between components of the cellulase system of the anaerobic rumen fungus *Neocallimastix frontalis* and those of the aerobic fungi *Penicillium pinophilum* and *Trichoderma koningii* in degrading crystalline cellulose 257
Xavier S, Lonsane BK: Sugar-cane pressmud as a novel and inexpensive substrate for production of lactic acid in a solid-state fermentation system 291
Yokota A, Shimizu H, Terasawa Y, Takaoka N, Tomita F: Pyruvic acid production by a lipoic acid auxotroph of *Escherichia coliW1485* 638